# Chapter 1

# Planning Considerations

## 1-1. General

a. The RC makes up nearly half of the military capability of today's US Army. RC units, in many instances, do not have a complete fill of authorized communications equipment; what they have may consist of different generations of equipment. Current economic realities limit how much additional communications equipment RC units can expect to receive. Thus, RC units must be prepared to mobilize with the equipment on hand in a "come-as-you-are" war.

b. AC units are also affected by this dilemma. Many RC units are related to an AC unit under an affiliation or roundout program. More specifically, they train and operate with their active counterparts. If old and new equipment must be interfaced, both AC and RC units must know the proper equipment interface procedures.

c. A similar problem could exist between allied units using different types of communications equipment, and US units using standardized, modernized, or upgraded communications equipment. Any military unit faces the possibility of operating with a shortage of equipment. Combat losses, excessive usage, maintenance problems, normal wear and tear, and delayed receipt of new equipment reduce equipment availability.

d. OPSEC principles must be inherent in all phases of a "come-as-you-are" war. The principal OPSEC elements of physical security, information security, signal security, and military deception must be continually applied, not only during combat operations, but also during peacetime planning. This ensures the protection of military operations and activities and prevents hostile exploitation of identified weaknesses. Shortages of equipment and personnel, equipment interface problems, training deficiencies, and other such problems are exploitable weaknesses that must be properly protected. Remember, the way we practice is the way we fight.

e. The NBC environment must be included in planning considerations. Communications in NBC conditions must be realistically anticipated and discussed with candor.

## 1-2. Reduced Equipment Planning

a. The key to operating with reduced equipment quantities is advance planning and action. Viable alternatives must be devised and supporting equipment and personnel must be requisitioned, obtained, and readied.

Critical questions must be answered. For example, what communications support can the first brigade expect based on the division's present capabilities? What is the tactical situation and what actions are planned next? What signal assets are available for supporting these actions? What are the minimum necessary communications support requirements for DTAC to the brigade TOC, DTOC, DISCOM, or others? What are the priorities?

b. There are no pat answers. We do know that the following types of traffic are essential:

- Command.
- Operations.
- Intelligence.
- Fire support.
- Logistics.

c. The next question is which means will be allocated to the respective critical needs? FM radio is used for the immediate command, operations, and fire support traffic. Some of this traffic will have to be passed over AM radio and multichannel radio systems, supplemented by alternate means. Lesser priority traffic should be passed over alternate means such as motor and air messenger service to the maximum extent possible.

1-3. NBC Environment

a. In the past, combat communications have been installed under difficult yet understandable conditions such as bad weather, limited equipment, and even hostile fire. These conditions are understandable because they have been experienced. We have grown up in good and bad weather. We have read combat histories, watched combat films, and even listened to soldiers who have participated in combat. The future battlefield will include an NBC environment not yet experienced. (See FM 3-100 for the fundamentals of NBC defense. )

b. The equipment may be contaminated by biological and chemical agents. Decontamination of internal electronic components may be difficult if not impossible. (See FM 3-5 for NBC decontamination and FM 3-3 for NBC contamination avoidance.) Thus, continuous operations in MOPP and its effect on personnel and installations must be included in planning estimates. Forward communications teams, PCM relays, and FM retransmission stations need to become familiar with displacement under limited visibility while in MOPP.

c. Operators are not as effective while in MOPP. Handling knobs while wearing bulky gloves can frustrate operators. Voice communications are difficult, not only with FM and AM/SSB radios, but also with orderwires, switchboards, and patch facilities. The problems in understanding verbal instructions can slow system installation and subscriber use. The MOPP equipment can generate heat and cause operator sweating which irritates the soldier causing anxiety and inattention to details. (See FM 3-4 for individual and collective NBC protection.)

d. Leaders, especially NCOs and first line supervisors, must understand that direct involvement in this situation may not solve the problem. The universality of MOPP appearance and the distortion of voice quality make familiar leaders appear unrecognizable. Only through proper supervisor training can soldiers' natural apprehension be translated into confidence.

1-4. NBC Communications

a. Communications will be affected in at least two ways during nuclear warfare: communications blackout and physical damage to equipment.

(1) Communications blackout is caused by intense ionization of the atmosphere in the vicinity of the blast. The blackout may last for a few seconds or several hours. It may be more severe on some frequencies than on others. During this period, communications is impossible.

(2) Physical damage depends on the nearness of the blast to the equipment. It can range from total disintegration (at ground zero) to thermal (heat) damage (several miles away) to electrical breakdown caused by the EMP radiated from the burst (several miles away). The EMP is perhaps the most subtle cause of physical damage. It is a very intense radio wave of extremely short duration produced at the instant a nuclear weapon is detonated. It usually lasts a fraction of a second. But the power it may deliver to a radio receiver can be a billion times greater than what is normally received from a transmitter. This extremely high power density can damage some signal equipment. EMP is silent and invisible.

b. The ability of a unit to continue to communicate during a tactical nuclear war will depend on planning, training, and equipment hardness. These actions must begin long before the war begins. System planning must use minimal resources to perform the mission allowing a portion to standby. Training must incorporate the use of hardened CPs and EMP prevention steps, such as shielding by natural terrain, burying of cables, and disconnecting equipment when not in use. Equipment hardening and buffering devices are included in new equipment development. However, these steps are based on mission accomplishment in a nuclear environment. All soldiers must train the way we expect to fight and communicate.